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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,425	07/02/2003	Hung-Kee Kim	45370	2584

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EXAMINER

PANWALKAR, VINEETA S

ART UNIT	PAPER NUMBER
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2611

MAIL DATE	DELIVERY MODE
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05/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/611,425

Applicant(s)

KIM ET AL.

Examiner

Vineeta S. Panwalkar

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-14 and 16 is/are rejected.
- 7) ☒ Claim(s) 7 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

- 1a. Applicant's arguments, see pages 9 and 10 of remarks, filed 1/19/07, with respect to the rejection(s) of claim(s) 1-16 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Reed et al. (US 5634206, hereinafter, Reed), Hottinen et al. (US 2002/0009156 A1, previously cited, hereinafter, Hottinen) and Willenegger et al. (US 2003/0174675 A1, hereinafter, Willenegger).

Drawings

- 1b. Figures 1, 2 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Reed.

2a. Regarding claim 1, Reed shows an apparatus for selecting one of first and second transmit antenna diversity schemes (Fig. 3, switch 120 performs claimed selecting) by a user equipment (UE) (Fig. 3) in a system (the remaining limitations in the preamble have not been given patentable weight because they do not breathe life into the body of the claims), the apparatus comprising:

- a channel estimator for receiving a first channel signal from the Node B transmitter, and estimating a channel response from the received first channel signal and a determiner for estimating a variation speed of the first channel based on the estimated channel response, and selecting one of the first and

second transmit antenna diversity schemes according to the estimated variation speed of the first channel (Fig. 3. Fading quality estimator 180 is interpreted as performing claimed channel estimation and claimed estimating of speed variation. Selection switch 120 is interpreted as performing claimed selecting. See column 2, line 45 – column 4, line 27 and column 5, lines 1-13);

- an information generator for generating information indicating the selected transmit antenna diversity scheme (Fig. 3, Diversity decision unit 118 is interpreted as claimed information generator. See column 4, lines 8-24).

3. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Hottinen.

3a. Regarding claim 13, Hottinen shows a method for selecting, by a Node B, one of first and second transmit antenna diversity schemes and transmitting a channel signal according to the selected transmit antenna diversity scheme in a system (Fig. 5. The remaining limitations in the preamble have not been given patentable weight because they do not breathe life into the body of the claims), the method comprising the steps of:

- receiving a first channel signal from the UE; detecting, from the received first channel signal, information indicating one of the first and second transmit antenna diversity schemes, selected by the UE; determining a transmit antenna diversity scheme to be applied to channel signals to be transmitted

by the Node B, based on the detected information; and encoding the channel signals according to the determined transmit antenna diversity scheme and transmitting the encoded channel signals (See Fig. 5 and paragraphs[0085] – [0093], wherein receiving information on the feedback link is interpreted as claimed receiving).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 2-6, 9-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed in view of Hottinen.
- 4a. Regarding claims 5 and 9, Reed shows an apparatus for selecting one of first and second transmit antenna diversity schemes (Fig. 3, switch 120 performs claimed selecting) by a user equipment (UE) (Fig. 3) in a system (the remaining limitations in the preamble have not been given patentable weight because they do not breathe life into the body of the claims), the apparatus (and corresponding method) comprising:
 - an information extractor for receiving a first channel signal from the UE, and detecting, from the received first channel signal, information indicating one of the first and second transmit antenna diversity schemes, selected by the UE (Fig. 3, Fig. 3. Fading quality estimator 180 is interpreted as claimed information extractor. See column 2, line 45 – column 4, line 27 and column 5, lines 1- 13);
 - a controller for determining a transmit antenna diversity scheme to be applied to channel signals to be transmitted by the Node B, based on the detected information(Fig. 3, Diversity decision unit 118 is interpreted as claimed controller. See column 4, lines 8-24); and
 - a transmitter (The receiver of Fig. 3 receives messages from a transmitter. See column 3, lines 24-34).

Thus, Reed shows all the limitations claimed, but fails to explicitly disclose whether the transmitter uses the determined diversity scheme.

In the same field of endeavor, however, Hottinen shows

- a transmitter for encoding the channel signals according to the determined transmit antenna diversity scheme and transmitting the encoded channel signals (Fig. 1 and paragraphs [0006] –[0009]).

Thus, it would have been obvious to a person of ordinary skill in the art to use the transmitter that encodes according to the determined diversity scheme as suggested by Hottinen in the system suggested by Reed because Hottinen's method provides enhanced robustness against erroneous signaling (Paragraph [0104]).

- 4b. Regarding claims 2 and 10, Reed shows all the limitations claimed, but fails to explicitly disclose the autocorrelation method.

In the same In the same field of endeavor, however, Hottinen shows system wherein:

- the determiner calculates an autocorrelation value of the channel response, and estimates a speed value mapped to the autocorrelation value as a variation speed of the first channel (Paragraph [0042]).

Thus, it would have been obvious to a person of ordinary skill in the art to use the autocorrelation method as suggested by Hottinen in the system suggested by

Reed because Hottinen's method provides enhanced robustness against erroneous signaling (Paragraph [0104]).

- 4c. Regarding claims 3, 6, 11 and 14, Reed shows all the limitations claimed, but fails to explicitly disclose the nature of information.

In the same In the same field of endeavor, however, Hottinen shows system wherein:

- the information indicating the selected transmit antenna diversity scheme includes a field indicating the selected transmit antenna diversity scheme and a field indicating a weight applied when the selected transmit antenna diversity scheme is used (Paragraphs [0010] – [0019]).

Thus, it would have been obvious to a person of ordinary skill in the art to use the information indication method as suggested by Hottinen in the system suggested by Reed because Hottinen's method provides enhanced robustness against erroneous signaling (Paragraph [0104]).

- 4d. Regarding claim 4 and 12, Reed shows all the limitations claimed, but fails to explicitly disclose the pilot channel.

In the same In the same field of endeavor, however, Hottinen shows system wherein:

- the first channel is a pilot channel (Paragraph [0008]).

Thus, it would have been obvious to a person of ordinary skill in the art to use the pilot channel as suggested by Hottinen in the system suggested by Reed because Hottinen's method provides enhanced robustness against erroneous signaling (Paragraph [0104]).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reed in view of Hottinen as applied to claim 5 above, and further in view of Willenegger.

- 5a. Regarding claim 7, Reed and Hottinen disclose all the limitations claimed.

Hottinen further discloses system wherein the first channel is a physical control channel (Paragraph [0018]), but fails to explicitly disclose if the channel may be a dedicated physical control channel.

In the same field of endeavor, however, Willenegger discloses system wherein:

- first channel is a dedicated physical control channel (Paragraph [00229]).

Thus, it would have been obvious to a person of ordinary skill in the art to use the dedicated physical control channel in the systems suggested by Hottinen and Reed because Willenegger's method reduces inter-channel interference (Paragraph [0008]).

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen in view of Willenegger.

6a. Regarding claim 16, Hottinen discloses all the limitations claimed.

Hottinen further discloses system wherein the first channel is a physical control channel (Paragraph [0018]), but fails to explicitly disclose if the channel may be a dedicated physical control channel.

In the same field of endeavor, however, Willenegger discloses system wherein:

- first channel is a dedicated physical control channel (Paragraph [00229]).

Thus, it would have been obvious to a person of ordinary skill in the art to use the dedicated physical control channel in the systems suggested by Hottinen because Willenegger's method reduces inter-channel interference (Paragraph [0008]).

Allowable Subject Matter

7. Claims 7 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Minowa et al. (US 2002/0093988 A1) shows a Rake receiver wherein fading channel speed is estimated based on channel estimation.
- Ling et al. (US 6172970 B1) show antenna diversity receiver wherein appropriate diversity mode is selected based on signal quality.
- Jin (US 6658045 B1) shows mobile speed estimator in a Rake receiver.
- Papasakellariou (US 6526090 B1) shows method for identifying a specific transmitter antenna (i.e., transmitter antenna diversity where a transmitter has more than one antenna).

Contact Information

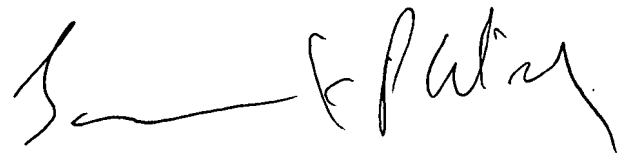
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vineeta S. Panwalkar whose telephone number is 571-272-8561. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VP



JAY K. PATEL
SUPERVISORY PATENT EXAMINER